

Application No. 10/804,660
Amendment dated June 12, 2006
Office Action mail date: February 10, 2006

Atty. Docket No. MP0403
PATENT APPLICATION

REMARKS/ARGUMENTS

Applicants thank the Examiner for the courtesies extended during the personal interview held June 6, 2006.

Claims 1-65 are pending in the application. Claims 1-44 stand rejected under 35 U.S.C. 102(b) as being anticipated by Lev et al. (6,043,633). Claims 45-65 stand rejected under 35 U.S.C. 102(b) as being anticipated by Seong. Applicants respectfully traverse these rejections, and request reconsideration and allowance of the claims in view of the following arguments.

As the Examiner knows, an anticipation rejection requires that the cited prior art meet every limitation of the claims. As discussed at the interview, neither of the applied prior art references teaches or suggests the invention as now claimed.

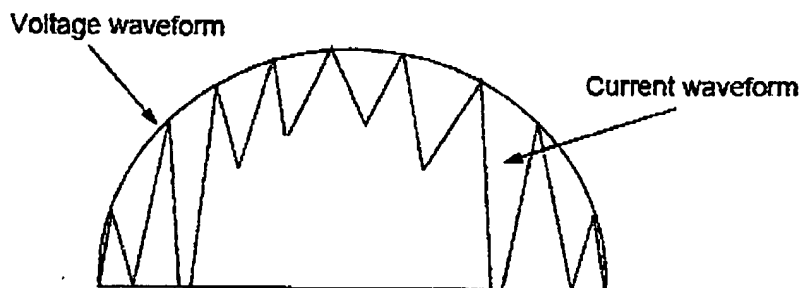
1. Lev

All of the independent claims in the present application, including claims 1, 15, 29, and 44, recite, in method or apparatus form, **dynamic** change between two of three operation modes in a boost converter. Applicants submit that Lev fails to teach or suggest such **dynamic** change.

The present invention, one embodiment of which is shown in Fig. 5A and which is described on pages 6 and 7 of the specification, changes operation mode of a boost converter during an operational cycle, that is, while the boost converter is operating. The specification refers to this change in mode as “dynamic” change. Fig. 5B of the application, shown for convenience on the next page, is an example of such **dynamic** change, including operation in continuous mode, discontinuous mode, and a transition between the two (critical mode), though the invention does not require a change among all three modes within one operational cycle.

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In contrast, as discussed during the interview, Lev teaches switching the converter off between modes in order to change modes. (Lev, col. 11, lines 6-20). Thus, if the Lev circuit is operating in the discontinuous mode, it will continue to operate in discontinuous mode until the circuit is reset. If the Lev circuit is operating in the critical mode, it will continue to operate in critical mode until the circuit is reset.

In addition, Fig. 15 of Lev shows two separate sets of waveforms: the waveforms on the left side are for critical mode, and the waveforms on the right side are for discontinuous mode:

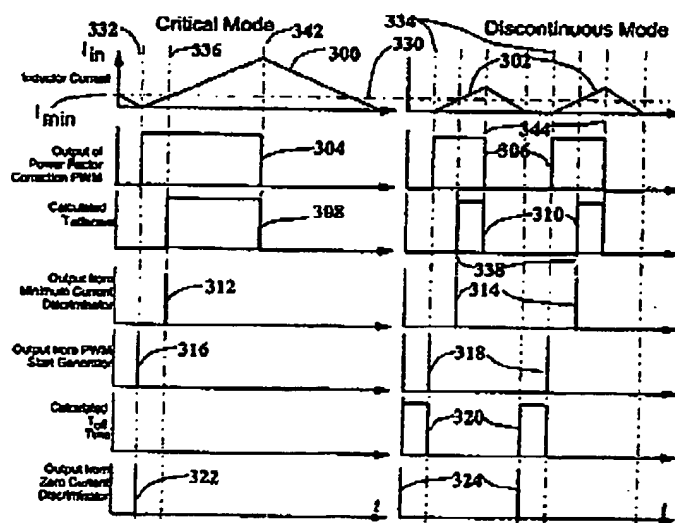


FIG. 15.

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Lev does not even show a waveform with two modes of operation. Thus, the operation mode clearly does not change from one mode to another when the Lev circuit is running.

From the foregoing, it is clear that the operation mode of the Lev circuit has to be pre-selected, and **cannot change dynamically** during operation of the boost converter, as the claimed invention requires.

Accordingly, Applicants submit that claims 1-44 are patentable.

2. Seong

Like claims 1-44, independent claims 45, 51, 56, and 61 recite, among other things, **dynamic change between operation modes**. However, like Lev, Seong fails to teach or suggest such **dynamic change**.

In its Background section, Seong mentions that there are three techniques for controlling input current by use of a boost converter: continuous current control, discontinuous current control and control at the boundary of the continuous and the discontinuous current. Seong states that the third technique is favorable, but its disadvantage is that the system as a whole becomes larger. Col. 1, lines 36-45. Seong then describes a circuit which enables an external pin count to be reduced by having a built-in boost converter controller and a built-in sense-FET in a single package.

Assuming for the sake of argument that Seong's third technique corresponds somehow to the "critical mode" that Applicants discuss in the present application, Seong discusses this third technique to the exclusion of the other techniques, other than a brief mention. Seong's focus on a single technique, separate discussion of the three modes, means that Seong fails to teach or

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suggest **dynamically** changing operation mode of the boost converter between two modes selected from the group consisting of continuous mode, critical mode and discontinuous mode.

Accordingly, Applicants respectfully submit that claims 45-65 are patentable.

Request for Allowance

It is believed that this Amendment places the application in condition for allowance, and early favorable consideration of this Amendment is earnestly solicited.

If, in the opinion of the Examiner, an interview would expedite the prosecution of this application, the Examiner is invited to call the undersigned attorney at the telephone number listed below.

The Office is hereby authorized to charge any fees, or credit any overpayments, to Deposit Account No. 11-0600.

Respectfully submitted,
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